

# EPA New England

## National Priorities List (NPL) Fact Sheet

Status: Archive

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Map of Site:

### NAVAL WEAPONS INDUSTRIAL RESERVE PLANT

Bedford, Massachusetts

Middlesex County



Street Address:

Zip Code: 01730

Congressional 06

District(s):

EPA ID #: MA6170023570

Site ID #: 0102032

Site Aliases:

Map of Site:

### Site Description

The Naval Weapons Industrial Reserve Plant (NWIRP) is a 46-acre facility that is part of a larger industrial complex located immediately north of Hanscom Air Force Base, which is also on the NPL. NWIRP is operated by Raytheon Co. and was established in 1952 when a missile and radar development laboratory was built. Then known as the Naval Industrial Research Aircraft Plant (NIRAP), the laboratory's mission was to provide facilities for research and development of radar, missile guidance systems, and related equipment. Flight test facilities were added on the southern portion of the site in 1959. Between 1959 and 1977, the Navy obtained about 43 additional acres from the Air Force. Buildings constructed during the past 25 years include large facility storage and government buildings near the northern property boundary, an Antenna Range Building, air conditioning and incineration facilities, and the Advanced Medium Range Air to Air Missile Development (AMRAD) Building. NWIRP currently is used for advanced technology research in weapons systems development. These activities include the design, fabrication, and testing of prototype equipment such as missile guidance and control systems. There are two primary operating areas at NWIRP: the Components Laboratory and the Flight Test Facility. Approximately 21 other buildings house various support activities related to the work at these two centers. Wastes generated at NWIRP include various volatile organic compounds (VOCs), photographic fixer, waste oil and coolants, lacquer thinner, unspecified solvents and thinners, Stoddard solvent, waste paint, and chromic, sulfuric, nitric, hydrochloric, and phosphoric acids. The Hartwell Road Well Field, part of the municipal water supply for the Town of Bedford, is located less than .5 miles from NWIRP. The three wells in this field were closed in 1984 after VOCs contamination was discovered. The Town of Bedford conducted an investigation that determined that NWIRP was a likely source of the well field contamination. Hanscom Air Base is also a potential contributor to the groundwater contamination in this area. Approximately 11,000 people rely on drinking water wells located within 4 miles of the site. The Shawsheen River, 7 miles downstream of NWIRP, is a source of drinking water for approximately 12,800 people. Nine residential areas and wetlands are located to the east and northeast of the site. There are extensive wetlands and several species of rare plants and wildlife along the Shawsheen River and the Elm Brook, both located downstream of NWIRP.

Site Responsibility: Federal

NPL LISTING HISTORY	
Proposed Date	06/23/1993
Final Date	05/31/1994



SEMS Doc ID 604688

## Threats and Contaminants

Hazardous wastes generated at NWIRP include VOCs, photographic fixer, waste oil and coolants, lacquer thinner, unspecified solvents and thinners, Stoddard solvent, waste paint, and chromic, sulfuric, nitric, hydrochloric and phosphoric acids. Iron and VOCs contamination including benzene, trichlorethene, and tetrachlorethene have been detected in three water supply wells operated by the Town of Bedford; these wells have since been closed. There are extensive wetlands and several species of rare plants and wildlife along this river and the Elm Brook, which is also located downstream from NWIRP. Ingesting or coming into contact with contaminated groundwater or wastes could be a health risk.

## Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

## Response Action Status

Entire Site:	<p>In 1986, the Navy initiated a study to determine potential contaminant sources at NWIRP. The study focused on past hazardous substance storage, use and disposal practices at the site. Construction of an Immediate Response Action (IRA) groundwater containment system for Site 3 (TCE Plume) began in the fall of 1995 and began operating in March 1997. The objective of the system is to contain contamination in the groundwater migrating from the northwest area of NWIRP. The system consists of a groundwater extraction system followed by groundwater treatment and discharge. Extraction of groundwater flow is intended to prevent VOCs contamination from potentially migrating north toward Elm Brook. By meeting this objective, the containment system will stop and prevent existing or potential VOCs (mainly TCE) contamination of drinking water or environmentally sensitive areas. The study also identified two disposal and spill sites: the Old Incinerator Ash Disposal Area and the Components Laboratory Fuel Tank Area. Potential contaminants of concern were metals in soils and groundwater near the Ash Disposal Area, total petroleum hydrocarbons (TPH) in soils and metals, and TPH in surface water near the Laboratory Fuel Tank Area. The study concluded that neither of the two areas posed a threat to human health or the environment, and that contaminant migration from them was unlikely. Additional investigations were conducted at NWIRP in 1989 and 1990. These investigations provided further data on soil and groundwater contamination associated with past storage and disposal practices at NWIRP. The investigation initially focused on the Ash Disposal Area and the Laboratory Fuel Tank Area, but also identified additional locations where potential contaminant sources might exist, including underground storage tanks (UST) for fuel and waste, leach fields, dry wells, and waste storage areas. The investigations concluded that additional studies were needed to completely characterize the nature and extent of contamination of the NWIRP. Additional, investigations began in late 1994 and a draft Phase II Remedial Investigation Report was completed in January 1997. As result of this study a BTEX plume was discovered in the vicinity of the transportation building. Further investigation (Supplemental Remedial Investigation) to define the BTEX plume and to define the limits of the TCE source area was completed in October 1998. The Final Phase II Remedial Investigation was completed in September 2000.</p>
TCE Northwest Plume:	<p>The final Feasibility Study was completed October 2001 and a draft Proposed Plan was issued by the Navy proposing insituousource treatment to eliminate or reduce the source, monitored natural attenuation and continued operation of the interim remedy until no longer required to ensure groundwater quality. However, due to the challenging site conditions and poor performance of insitu source treatment at other sites, the Navy, EPA and MADEP have agreed to delay the Proposed Plan and ROD 18-24 months to perform a pilot study of insitu Thermal Treatment to assess it's potential effectiveness in meeting the cleanup goals. As of October 2002, a thermal treatment subcontractor has been engaged and is preparing a work plan. The interim groundwater extraction and treatment system</p>

	continues to operate.
Old Incinerator Ash Disposal Area,:	A no further action record of decision was signed on September 28, 2000.
Components Laboratory Fuel Oil Tank:	A no further action record of decision was signed on September 28, 2000.
BTEX Plume:	The final Feasibility Study was completed in October 2001 and a draft Proposed Plan was issued by the Navy for EPA comment. The proposed remedy will include source treatment and monitored natural attenuation and monitoring. An injection of treatment chemicals was performed in the winter of 2001 and in the spring of 2002. They resulted in reducing plume core concentrations of BTEX compounds by 50%. However, this was not enough reduction for natural attenuation to complete cleanup in the projected timeframe of 20 years. The proposed plan has been deferred and the Navy is planning a removal action achieve the lower source area concentrations required for natural attenuation to complete cleanup in 20 years. This is planned to be performed in 2003.
South Flight Test Area	Groundwater underneath the South Flight Test Area is contaminated with low level VOC's. Groundwater in this area flows toward and is captured by the Hanscom Air Force Base groundwater extraction and treatment system. Since the contaminated groundwater is being treated and the concentrations are relatively low, it was generally agreed that this action was protective and sufficient for now despite never locating a definitive VOC source. To formalize this arrangement, the Navy is required to enter into a Memorandum of Understanding with the Air Force. As of October 2002, the Air Force and Navy have concurred in language and the MOU is being forwarded for formal signature. A long term monitoring plan has been developed and monitoring began in 2002.

## Environmental Progress

Initial studies indicate that no immediate threats to human health and safety exist at the Naval Weapons Industrial Reserve Plant site. Proposed remedies were formulated by the Navy, but were deferred at the TCE plume for a pilot test and at the BTEX plume due to failure to meet goals. In the interim, the on-site groundwater containment system at the TCE plume will keep contaminants from spreading from the site and the pilot test to inject treatment chemicals into the BTEX plume core reduced concentrations.

## Current Site Status

Draft Proposed Plans for the TCE and BTEX plume have been deferred for the time being. In 2003 an insitu thermal treatment system will undergo a pilot test at the TCE plume and a source soil removal will be conducted at the BTEX plume. Documentation of the treatment of chlorinated solvents at the south end of NWIRP Bedford by the adjacent Hanscom Air Force Base groundwater extraction and treatment system through a Memorandum of Understanding with the Air Force is in routing for signature. A monitoring plan has been developed and will commence in the fall of 2002.

## Site Photos

### ***Newsletters & Press Releases:***

Recent Press Releases about this project (if any)

<http://www.epa.gov/ne/superfund/sites/nwlrp/search.htm>

☐ Exit EPA ☐ PDF

### ***Federal Register Notices:***

Final NPL Listing

<http://www.epa.gov/superfund/sites/npl/f940531.htm>

☐ Exit EPA ☐ PDF

**Decision Documents:**

View Records of Decision (RODS)  
on-line (EPA HQ)

<http://cfpub.epa.gov/superrods/rodslist.cfm?msiteid=0102032> ☐ Exit EPA ☐ PDF

**Other Links:**

NPL Site Narrative at Listing:

<http://www.epa.gov/superfund/sites/npl/nar1391.htm> ☐ Exit EPA ☐ PDF

**Site Repositories**

Bedford Public Library, # 7 Mudge Way, Bedford, MA 01730 (617) 275-9440

OSRR Records and Information Center , 1st Floor, 5 Post Office Square, Suite 100 (HSC), Boston, MA 02109-3912 (617) 918-1440

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